

Application No. 10/727,353

Filed: December 3, 2003

TC Art Unit: 3652

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REMARKS

The foregoing amendment is filed in response to the Office Action dated December 6, 2005. Reconsideration is respectfully requested.

The status of the claims is as follows:

Claims 1-64 are currently pending.

Of the above, claims 28-52 are withdrawn from consideration.

Claims 1-27 and 53-64 stand rejected.

Claims 1-3, 5-6, 8, 12-13, 19-20, and 53-57 have been amended.

The Examiner has rejected claims 1-6, 12-13, 19-20, and 53-57 under 35 U.S.C. 102(b) as being anticipated by Nakane et al. (USP 4,483,651). Specifically, the official action indicates that the Nakane reference discloses a material unit transfer apparatus for moving at least one material unit between transport equipment 2 and at least one storage location 5, including a first planar platform 3 configured to hold at least two material units 8, a first transfer mechanism 11 operatively coupled to the first platform and configured to move one or more material units along a first axis, and a second transfer mechanism 4 operatively coupled to the first platform and configured to move material units between the first platform and an adjacent second platform 3'

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along a second axis at a right angle to the first axis (see Fig. 1 of Nakane et al.). The Applicants respectfully submit, however, that the Nakane reference does not teach or suggest each and every element of amended claim 1, and therefore the rejections of claims 1-6, 12-13, 19-20, and 53-57 under 35 U.S.C. 102 should be withdrawn.

For example, the Nakane reference neither teaches nor suggests the material unit transfer apparatus of amended claim 1, which includes a first substantially planar platform configured to hold at least two material units, a first transfer mechanism operatively coupled to the first platform, and configured and operable to move one or more material units between the first platform and the transport equipment or the storage locations in a direction of a first axis, and a second transfer mechanism operatively coupled to the first platform, and configured and operable to move one or more material units between the first platform and a second substantially planar platform adjacent the first platform in a direction of a second axis, the second axis being disposed at substantially a right angle to the first axis, in which the second transfer mechanism includes at least two second transfer sub-mechanisms, each of said at least two second transfer sub-mechanisms being configured to operate independent of

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the other second transfer sub-mechanism to move a respective one of said one or more material units between the first and second platforms. Such a material unit transfer apparatus is described throughout the instant application, for example, see page 4, line 21, to page 5, line 27, and Figs. 1-2, 4, 5a-5b, and 6 of the application.

In contrast, the transfer apparatus disclosed in the Nakane reference includes the first transfer mechanism 11 (see Fig. 1 of Nakane et al.). The Applicants respectfully submit that the Nakane reference provides no hint that the first transfer mechanism 11 is configured and operable to move one or more material units between the first platform and the transport equipment or the storage locations in a direction of a first axis, as recited in amended claim 1. Instead, the Nakane reference discloses that the first transfer mechanism 11 is operative to transfer only a single wafer 8 into and out of the chamber 2 (see column 3, line 66, to column 4, line 6, and Fig. 1, of Nakane et al.). The Nakane reference neither teaches nor suggests that the first transfer mechanism 11 is capable of transferring more than one wafer into and out of the chamber 2.

Further, the transfer apparatus of Nakane et al. includes the second transfer mechanism 4 (see Fig. 1 of Nakane et al.). The

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Applicants respectfully submit that the Nakane reference provides no hint that the second transfer mechanism 4 is configured and operable to move one or more material units independently between the first platform and a second substantially planar platform adjacent the first platform in a direction of a second axis substantially at a right angle to the first axis, as recited in amended claim 1. Instead, the Nakane reference discloses that the second transfer mechanism 4 is operative to transfer the only a single wafer 8 to the branched transfer conveyor 3 (see column 3, lines 50-58, and Fig. 1, of Nakane et al.). The Nakane reference neither teaches nor suggests that the second transfer mechanism 4 is capable of transferring more than one wafer independently to the branched transfer conveyor 3.

More specifically, the Applicants submit that the Nakane reference neither teaches nor suggests that the second transfer mechanism 4 includes at least two second transfer sub-mechanisms, each of which is configured to operate independent of the other to move a respective one of the material units between the first and second platforms, as recited in amended claim 1. Even if multiple wafers 8 were placed on the second transfer mechanism 4 of Nakane et al., it is clear that the second transfer mechanism 4 would be incapable of moving one of the multiple wafers 8 independent of

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the other wafer. This is because the second transfer mechanism 4 does not include at least two second transfer sub-mechanisms that can operate independent of the other second transfer sub-mechanism, as recited in amended claim 1.

In addition, the Applicants respectfully submit that the Nakane reference does not teach or suggest the material unit transfer apparatus of amended claim 12, which includes a third transfer mechanism configured and operable to move one or more material units in a direction of a third axis disposed at substantially right angles to the first and second axes, in which the third transfer mechanism includes at least two third transfer sub-mechanisms, each of which is configured to operate independent of the other to move a respective one of the material units in a direction of the third axis. Instead, the Nakane reference merely discloses the third transfer mechanism 9, which is associated with the first transfer mechanism 11 for lifting material units along a third axis at right angles to the first and second axes (see Fig. 1 of Nakane et al.). Nakane et al. fail to disclose at least two third transfer sub-mechanisms associated with the first transfer mechanism 11 for moving the material units independently in a direction of the third axis, as recited in amended claim 12.

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Important advantages are derived from providing a material unit transfer apparatus including a first substantially planar platform for holding at least two material units, a first transfer mechanism operatively coupled to the first platform for moving one or more material units between the first platform and the transport equipment or the storage locations in a direction of a first axis, and a second transfer mechanism operatively coupled to the first platform for moving one or more material units between the first platform and a second substantially planar platform adjacent the first platform in a direction of a second axis, the second axis being disposed at substantially a right angle to the first axis, in which the second transfer mechanism includes at least two second transfer sub-mechanisms, each of said at least two second transfer sub-mechanisms being configured to operate independent of the other second transfer sub-mechanism to move a respective one of said one or more material units between the first and second platforms, as recited in amended claim 1.

For example, the material unit transfer apparatus of amended claim 1 can (1) move two WIP parts from a two-WIP part deep storage location to a double nest platform, and move the two WIP parts back to their original sites in the storage location, (2) move a first WIP part from the site in the storage location

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farthest from the material unit transfer apparatus to the site on the double nest platform farthest from the storage location, and move the first WIP part back to its original site in the storage location, (3) move the first WIP part from the site in the storage location farthest from the material unit transfer apparatus to the site on the double nest platform closest to the storage location, and move the first WIP part back to its original site in the storage location or to the site in the storage location closest to the material unit transfer apparatus, (4) in the event there is no WIP part disposed at the site in the storage location farthest from the material unit transfer apparatus, move a second WIP part from the site in the storage location closest to the material unit transfer apparatus to the site on the double nest platform closest to the storage location, (5) in the event there is no WIP part disposed at the site in the storage location closest to the material unit transfer apparatus, move the first WIP part from the site in the storage location farthest from the material unit transfer apparatus to the site in the storage location closest to the material unit transfer apparatus, and (6) in the event there is no WIP part disposed at the site in the storage location farthest from the material unit transfer apparatus, move the second WIP part from the site in the storage location closest to

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the material unit transfer apparatus to the site in the storage location farthest from the material unit transfer apparatus (see page 5, line 28, to page 7, line 3, of the application). By simultaneously accessing multiple WIP parts from storage locations and/or transport equipment disposed beside the claimed material unit transfer apparatus, a highly efficient interface between the WIP storage locations and transport equipment is achieved (see page 7, lines 17-21, of the application). The Applicants respectfully submit that such functionality and resulting advantages of the claimed material unit transfer apparatus are neither taught nor suggested by Nakane et al.

Accordingly, it is respectfully submitted that the Nakane reference does not anticipate amended claim 1, and therefore the rejections of claim 1 and claims 2-6, 12-13, 19-20, and 53-57 dependent therefrom under 35 U.S.C. 102 should be withdrawn.

The Examiner has rejected claims 1-3, 7-12, and 17-18 under 35 U.S.C. 102(b) as being anticipated by Hainsworth (USP 4,492,504). Specifically, the official action indicates that the Hainsworth reference discloses a material unit transfer apparatus including a first platform 44, a first transfer mechanism 46, a second platform 40, and a second transfer mechanism 50 (see Fig. 2 of Hainsworth). However, the Applicants respectfully submit that,

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like the Nakane reference, the Hainsworth reference neither teaches nor suggests that the first transfer mechanism 46 is configured to move one or more material units between the first platform and the transport equipment or the storage locations in a direction of a first axis, as recited in amended claim 1. Instead, the Hainsworth reference discloses that the first transfer mechanism 46 is operative to transfer only a single container 30 into and out of the storage area 20 (see column 6, lines 27-30, and Fig. 2, of Hainsworth).

Moreover, the Applicants respectfully submit that, like the Nakane reference, the Hainsworth reference neither teaches nor suggests that the second transfer mechanism 50 is configured to move one or more material units independently between the first platform and a second substantially planar platform adjacent the first platform in a direction of a second axis substantially at a right angle to the first axis, as recited in amended claim 1. Instead, the Hainsworth reference discloses that the second transfer mechanism 50 is operative to transfer only a single container 30 onto and off of the platform 44 (see column 6, lines 35-37, of Hainsworth).

In addition, the Applicants respectfully submit that, like the Nakane reference, the Hainsworth reference neither teaches nor

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suggests the material unit transfer apparatus of amended claim 12, which includes the third transfer mechanism for moving one or more material units in a direction of a third axis disposed at substantially right angles to the first and second axes, in which the third transfer mechanism includes at least two third transfer sub-mechanisms, each of which is configured to operate independent of the other to move a respective one of the material units in a direction of the third axis. Instead, the Hainsworth reference merely discloses the third transfer mechanism 60 for raising and lowering the platform 44 (see column 6, lines 53-57, of Hainsworth). The Applicants respectfully submit that the Hainsworth reference fails to disclose at least two third transfer sub-mechanisms for moving one or more material units independently in a direction of the third axis, as recited in amended claim 12. The Applicants further submit that the Hainsworth reference does not disclose the functionality and resulting advantages of the claimed material unit transfer apparatus, as discussed above with reference to Nakane et al.

Accordingly, it is respectfully submitted that the Hainsworth reference does not anticipate amended claim 1, and therefore the rejections of claim 1 and claims 2-3, 7-12, and 18 dependent therefrom under 35 U.S.C. 102 should be withdrawn.

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The Examiner has rejected claims 4-6 under 35 U.S.C. 103(a) as being unpatentable over Hainsworth in view of Hansl (US 2003/0185656). The Applicants respectfully submit, however, that the Hansl reference does not cure the deficiencies of the Hainsworth reference. Specifically, the Hansl reference neither teaches nor suggests a material unit transfer apparatus including a first substantially planar platform for holding at least two material units, a first transfer mechanism operatively coupled to the first platform for moving one or more material units between the first platform and the transport equipment or the storage locations in a direction of a first axis, and a second transfer mechanism operatively coupled to the first platform for moving one or more material units between the first platform and a second substantially planar platform adjacent the first platform in a direction of a second axis, the second axis being disposed at substantially a right angle to the first axis, in which the second transfer mechanism includes at least two second transfer sub-mechanisms, each of said at least two second transfer sub-mechanisms being configured to operate independent of the other second transfer sub-mechanism to move a respective one of the material units between the first and second platforms, as recited in amended claim 1. Therefore, even if the Hainsworth and Hansl

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references were combined as suggested in the official action, the resulting combination would not render claims 4-6 (which depend from amended claim 1) obvious. Accordingly, it is respectfully submitted that the rejections of claims 4-6 under 35 U.S.C. 103 should be withdrawn.

The Examiner has rejected claims 14-18, 21-25, and 58-62 under 35 U.S.C. 103(a) as being unpatentable over Nakane et al. The Examiner has also rejected claims 14-16 under 35 U.S.C. 103(a) as being unpatentable over Hainsworth. In addition, the Examiner has rejected claims 19-27 and 53-64 under 35 U.S.C. 103(a) as being unpatentable over Hainsworth in view of Nakane et al. However, as explained above, neither the Nakane reference nor the Hainsworth reference teaches or suggests the material unit transfer apparatus of amended claim 1, which includes a first transfer mechanism for moving one or more material units between a first platform and transport equipment or storage locations in a direction of a first axis, and a second transfer mechanism for moving one or more material units independently between the first platform and a second platform adjacent the first platform in a direction of a second axis, the second axis being disposed at substantially a right angle to the first axis. Further, neither the Nakane reference nor the Hainsworth reference teaches or

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suggests the functionality and advantages resulting from the claimed material unit transfer apparatus. Accordingly, it is respectfully submitted that the rejections of the above-listed claims 14-18, 19-27, and 53-64 under 35 U.S.C. 103 should be withdrawn.

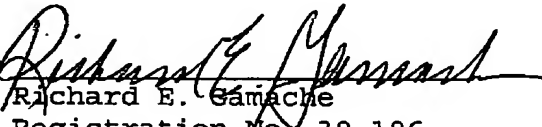
In view of the foregoing, it is respectfully submitted that the present application is in a condition for allowance. Early and favorable action is respectfully requested.

The Examiner is encouraged to telephone the undersigned Attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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